CFMOTO

CF625-B CF625-C Service Manual

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FORWARD

This manual introduces X6 EFI version(CF625-B/CF625-C) maintenance information, disassembly procedure, check & adjustment methods, trouble-shooting and technical specifications. There are illustrations, drawing to guide your operations.

Chapter 1 mainly introduces general operation information, tools, vehicle structure and basic specifications.

Chapter 2 mainly introduces check & adjustment methods and how to do vehicle maintenance.

Chapter 3 mainly introduces disassembly, installation, adjustment, maintenance and trouble-shooting information.

CFMOTO reserves right to make improvements and modifications to the products without prior notice. Overhaul and maintenance should be done according to actual condition of vehicle.

Zhejiang CFMOTO Power Co., Ltd.

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Conversion Table

Item	Example	Conversion
Pressure	200 kPa(2.00kgf/cm^2) 33kPa (250mmHg)	1kgf/cm^2=98.0665kPa 1kpa=1000Pa 1mmHg=133.322Pa=0.133322kPs
Torque	18N・m(1.8kgf・m)	1kgf・m=9.80665N・m
Volume	419ml	1ml=1cm^3=1cc 1l=1000cm^3
Force	12N(1.2kgf)	1kgf=9.80665N

Cautions

Safety Cautions

1. Hazardous components in exhaust. Do not run the engine in a enclosed or poorly ventilated place for long time.

2. Do not touch the engine or muffler with bare hands after the engine has just stopped to avoid burns. Wear long-sleeve work clothes and gloves for operation.

3.Battery acid (dilute sulfuric acid) is highly caustic and may cause burns to skin and eyes. Flush with water if splashed to skin and get immediate medical attention. Flush with water if splashed to clothes to avoid burns. Keep battery and liquid away from reach of children

4.Anti-freeze is poisonous. Do not drink or splash to skin, eyes or clothes. Flush with plenty of soap water if splashed to skin. If splashed into eyes, flush with water and consult the doctor. If drinking the coolant, induce vomit and consult the doctor. Keep coolant away from reach of children.

5. Wear proper work clothes, cap and boots. If necessary, were dust-glass, gloves and safety glasses.

6. Gasoline is highly flammable. No smoking or fire. Also keep against sparks. Vaporized

gasoline is also explosive. Operate in a well-ventilated place.

7.When charging, Battery may generate hydrogen which is explosive. Charge the battery in a well-ventilated place.

8. Be careful not to get pinched by the turning parts like wheels and clutch.

9. When more than two people are operating, keep reminding each other for safety purpose.

Cautions for Disassembling and Assembling

1. Use genuine CFMOTO parts, lubricants and grease

3. Clean the mud, dust before overhauling

2. Store the disassembled parts separately in order for correct assemble.

4. Replace the disassembled washers, o-rings, piston pin retainer, cotter pin with new ones.

5. Elastic retainers might get distorted after disassembled. Do not use the loosened retainers.

6. Clean and blow off the detergent after disassembling the parts. Apply lubricants on the surface of moving parts. Measure the data during disassembly for correct assembling.

7.If you do not know the length of screws, install the screws one by one and make sure they are screwed in with same depth.

8.Check if the disassembled rubber parts are aged and replace if necessary. Keep the

rubber parts away from grease.

9.Pre-tighten the bolts, nuts and screws, then tighten according to the specified torque,

from big to small and from inner side to outer side.

10.Replace aged rubber parts before assembling. Do not mix volatile oil and grease on the surface,due to aggressivness of fuel and oil.

11.Apply or inject recommended lubricant to the specified parts

12.Use special tools wherever necessary.

13. When ball bearing disassembled by pressing ball ring, it can not be reused.

14.Turn the inner and outer rings of ball bearing to make sure the bearing will turn smoothly.

- Replace if any axial or radial play is found.
- If the surface is uneven, clean with oil and replace if the cleaning does not help.When pressing the bearing into the machine or to the shaft.

15.Install the one-side dust-proof bearing in the right direction. When assembling the open type or double-side dustproof bearing, install with manufacturer's mark outward.

16.Keep the bearing block still when blowing dry the bearing after washing clean. Apply oil or lubricant before assembling.

17.Install the elastic circlip properly. Turn the circlip after assembling to make sure it has been seated into the slot.

18.After assembling, check if all the tightened parts are properly tightened and can move smoothly.

19.Brake fluid and coolant may damage coating, plastic and rubber parts. Flush these parts with water if splashed.

20.Install oil seal with the side of manufacturer's mark outward.

- Do not fold or scratch the oil seal lip.
- Apply grease to the oil seal lip before assembling

21.When installing pipes, insert the pipe till the end of joint. Fit the pipe clip, if any, into the groove. Replace the pipes or hoses that cannot be tightened.

22.Do not mix mud or dust into engine and/or the hydraulic brake system.

23.Clean the gaskets and washers of the engine casing before assembling. Remove the scratches on the joint faces by polishing evenly with an oilstone.

24.Do not twist or bend the cables too much. Distorted or damaged cables may cause poor operation.

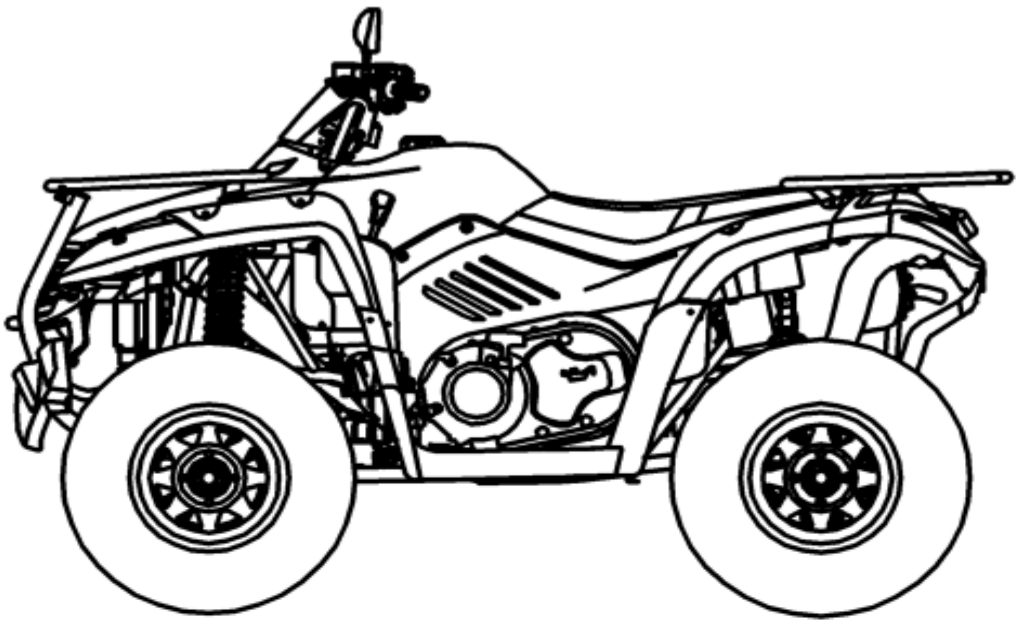
25.When assembling the parts of protection caps, insert the caps to the grooves, if any.

Numbers Marking Location

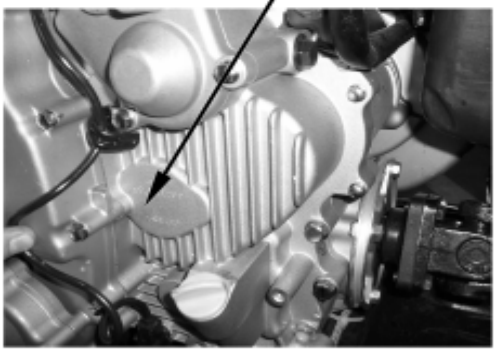
CF625-B/CF625-C

VIN Number: LCELDUS1~/LCELDUS2~

Engine Number:196S-B~



Engine Number Location



VIN Number Location

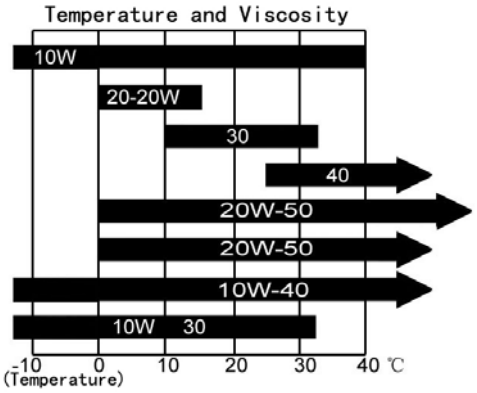
Main Data Table

Item			Parameter
Model			CF625-B/CF625-C
Length			CF625-B:2100mm CF625-C: 2300mm
Width			1180mm
Height			1230mm
Wheel base			CF625-B: 1290mm CF625-C: 1490mm
Engine type			196S-B
Displacement			CF625-B/CF625-C:594cm^3
Fuel type			Unleaded gasoline RQ-90or above
Dry weight			CF625-B: 344 kg CF625-C: 358 kg
Number of Passengers			CF625-B:1 (driver included) CF625-C:2 (driver included)
Max. Load			210 kg
Tire		Front Tire	25×8-12 40J
			185/80-12 40J
		Rear Tire	25×10-12 47J
			270/60-12 47J
Min. Ground Clearance			275mm
Turning Diameter			CF625-B:4000mm CF625-C:4750mm
Engine	Starting		Electrical starting, Manual Starting
	Engine Type		Single cylinder, 4-stroke, Liquid-cooled, 4 valves, OHC
	Combustion Chamber Type		Triangle
	Valve Driving Type		SOHC /Chain Drive
	Bore ×Stroke		196S-B: 96mm×82.0mm
	Compression Ratio		196S-B:10:1
	Lubrication Type		Pressure & Splash
	Oil Pump Type		Rotor
	Lubricant Filter Type		Full flow filter
	Oil Type		SAE15W-40/SF
	Cooling Type		Closed coolant circulation
	Coolant Type		-35℃ anti-rust anti-freeze

Item				Parameter
Fuel Device	Air Filter type			Sponge element filter
	Valve	Type		Type: CF188-B-173000
		Diameter of mixing valve		36mm
Gearing	Clutch	Wet, Auto-Centrifugal		
	Operation Mode	Automatic（CVT）+Parking & Gear Shifting		
	Gears Shift	Low Gear, High Gear & Reverse Gear		
	Shift Mode/order	Manual /L-H-N-R		
	（CVT）Transmission Ratio	2.88～0.70		
	Gear Ratio	Final Ratio	1.333（24/18，Bevel Gear）	
		Secondary Ratio	1.952（41/21）	
		Gears	Low Gear：2.25(36/16)；High Gear：1.350(27/20)；Reverse Gear：1.471(25/17)	
		Total	Low Gear5.857；High Gear：3.514；Reverse Gear：3.828	
	Axle Ratio	Front Axle	33 / 9 = 3.667	
		Rear Axle	33 / 9 = 3.667	
	Engine Output Mode		Front/Rear Shaft	
	Direction of Output Rotation		Clockwise on forward shift	
Steering Device	Steering Angle	Inner	31°	
		Outer	31°	
Brake Type		Front	Hydraulic Disc	
		Rear	Hydraulic Disc	
Bumper Device	Suspension	Swing Arm		
Frame Type		Welded Steel Tube and Plate		

Maintenance Parameters Table

Lubrication System

Item		Standard	Service Limit
Engine Oil Capacity	Volume when replacing	1900mL(2.01Qts)	—
	Volume when replacing filter	2200mL(2.32Qts)	—
Recommended Oil（See Original）  		·Specially for 4-stroke motorcycle SAE-15W-40 Substitutes must be used in the following range. API type: SE or SF grade SAE type: Choose from the left chart according to the environmental temperature	
Oil Pump Rotor	Gap between Inner and Outer Rotors	0.03～0.1mm	0.15mm
	Gap between Outer rotor and body	0.03～0.1mm	0.12mm
	Oil pressure	130-170KPa(18.85Psi-24.66Psi) at 3000RPM	

Air Inlet System

Item		Standard
Fuel Tank Capacity	Full capacity	18L(4.76Gallons)
Valve		CF188-B-173000
Inlet Pressure Sensor		CF188-B-175000
Inlet Temperature Sensor		CF188-B-177000
Air Bypass Valve		CF188-B-172000
Injector		CF188-B-171000
Idle Speed		1400±100rRPM

Cooling System

Item		Standard/Parameter		Service Limit	Remark
Full Capacity		2000ml	0.53Gallons		
Reservoir tank capacity		300ml	10.14Ounces		
Standard Density		50%			
Opening pressure of radiator cap		108kpa(1.1kgf/cm^2)	15.6Psi		
Thermostat	Initial Temperature	71±3℃	159.8 F		
	Full opening Temperature	88℃	190.4 F		
	Full opening lift range	3.5～4.5mm/95?			
Temperature and Resistance of Water Temperature Sensor	Temperature(℃)	End B Resistance(Ω)	End A C Resistance(kΩ)		
	-20	----	13.71-16.94		
	25	-----	1.825-2.155		
	50	176-280	---		
	80	63.4-81.4	0.303-0.326		
	110	24.6-30.6	0.138-0.145		
Temperature of Thermostat	Close -Open	88℃(190.4F)Round	88℃ Round	190.4F	
	Open-Close	82℃(179.6F)Round	82℃ Round	179.6F	
Coolant Type	-35℃ anti-freeze, antisepsis, high-boil coolant				

Front Wheel

Item			Standard	Operation Limit
Front Wheel	Play of wheel rim	Vertical	1.0mm	2.0mm
		Horizontal	1.0mm	2.0mm
	Tire	Groove	—	3.0mm
		Pressure	35kPa（0.35kgf / cm^2）/(5.08Psi)	—

Rear Wheel

Item			Standard	Operation Limit
Rear Wheel	Play of wheel rim	Vertical	1.0mm	2.0mm
		Horizontal	1.0mm	2.0mm
	Tire	Groove	—	3.0mm
		Pressure	30kPa（0.30kgf / cm^2）/(4.35Psi)	—

Brake System

Item		Standard	Operation Limit
Front Brake	Brake End Play	0mm	—
	Brake Disc Thickness	3.5mm	2.5mm
Rear Brake	Brake End Play	5-10 mm	—
	Brake Pedal Play	0mm	—
	Brake Disc Thickness	7.5mm	6.5mm

Battery, Charging Device, Pickup Coil

Item			Standard
AC Magneto Motor	Model		Permanentmagnet AC Type
	Output		3-phase AC
	Charging Coil Resistance(20℃)		0.2Ω-0.3Ω
	Pickup Coil Resistance		110Ω-140Ω
	Magneto without Load Voltage/(Idle Speed)		＞100V（AC），5000r/min
	Max. Output Power		300W，5000r/min
	Rated Voltage		13.5V-15.0V, 5000r/min
	Peak Voltage of Pickup Coil		＞120V
Rectifier			Three-phase annular rectification, Silicon controlled parallel-connected regulated voltage
Battery	Capacity		Capacity
	Terminal Point Voltage	Fully Charged	12.8V
		Insufficient Charged	<11.8V
	Charging Current/time	Standard	0.9A / 5～10H
		Quick	4A / 1H

Ignition Device

Item		Standard
Ignition		ECU Ignition
Spark Plug	Type	Resistance Spark plug
	Standard	DPR7EA-9(NGK)
	Optional	DR8EA ,D7RTC
	Spark plug gap	0.8-0.9mm
	Spark Characteristic	＞8mm，1mpa
Ignition Timing		BTDC10°CA 1500r/min
Ignition Coil Resistance	Initial	0.74Ω-0.78Ω
	Secondary	10.1kΩ-11.1 kΩ
Peak Voltage	Ignition Coil	＞150V
	Pulse Generator	2V
Starter Relay Coil Resistance		3Ω-5Ω
Secondary Starter Relay Coil Resistance		90Ω-100Ω

Lights, Instrument, Switches

Item		Standard
Fuse	Main	20A
	Auxiliary	10A×2 15A×2
Light, Bulb Fuse	Head Light（Hi / Lo）	12V—35W/35W×2
	Brake Light/ Tail Light	12V—5W×2
	Turning Light	12V—21W/5W
	Dashboard Indicator Light	12V—10W×4
	Indicators	φ5 LED
	Main	LCD

Air Inlet Device+ Cylinder Head **(mm)**

Item	Standard		Operation Limit
Valve Diameter	Intake	32.6	———
	Exhaust	29	———
Valve Clearance	Intake	0.05-0.10	———
	Exhaust	0.17-0.22	———
Fit Clearance between Valve Guide and Valve Stem	Intake	0.010-0.037	———
	Exhaust	0.030-0.057	———
Internal dia. of Valve Guide	Intake & Exhaust	5.000-5.012	———
Exterior dia. of Valve Stem	Intake	4.975-4.990	———
	Exhaust	4.955-4.970	———
Valve Stem Run-out	Intake & Exhaust	———	0.05
Length of Valve Stem End	Intake & Exhaust	2.9-3.1	2.3
Thickness of Valve Head	Intake & Exhaust	———	0.5
Valve Head Seal Run-out	Intake & Exhaust	———	0.03
Width of Valve Seats Seal	Intake & Exhaust	0.9-1.1	———
Length of Valve Spring	Intake & Exhaust	40	38.8
Valve Spring Tension	Intake & Exhaust	Tension182-210N /Length31.5mm	———
Cam Height	Intake	33.430-33.490	33.130
	Exhaust	33.500-33.560	33.200
Fit Clearance between Camshaft Exterior dia. &Bore.	φ22	0.032-0.066	0.150
	φ17.5	0.028-0.059	0.150
Camshaft Exterior dia.	φ22	21.959-21.980	———
	φ17.5	17.466-17.484	———
Camshaft Bore Internal dia.	φ22	22.012-22.025	———
	φ17.5	17.512-17.525	———
Camshaft Run-out	———		0.10
Rocker Arm Internal dia.	Intake & Exhaust	12.000-12.018	———
Rocker Arm Shaft Exterior dia.	Intake & Exhaust	11.973-11.984	———
Plainness of Cylinder Head Adjoining Plant	0.03		0.05
Plainness of Cylinder Head Cover Adjoining Plant	0.03		0.05

Cylinder + Piston + Piston Ring + Crankshaft (mm)

Item	Standard			Operation Limit	Remark
Cylinder Pressure	1000kPa			———	
Fit Clearance between Piston and Cylinder	196S-B:0.048-0.068			0.15	
Piston Skirt dia.	196S-B:95.960-95.980 Testing the point away skirt end 4mm			95.880	
Internal dia. of Cylinder	196S-B: 96.018-96.038			———	
Plainness of Cylinder Adjoining Plant	0.015			0.05	
Piston Ring Free Gap	Top Ring	R	11.7 round	8.9	
	2nd Ring	R	12 round	9.5	
Piston Ring Closed Gap	Top Ring		0.20-0.35	0.60	
	2nd Ring		0.15-0.30	0.60	
Piston Annular Fit Clearance	Top Ring		0.04-0.08	0.180	
	2nd Ring		0.03-0.07	0.150	
Thickness Piston Ring	Top Ring		0.97-0.99	———	
	2nd Ring		1.17-1.19	———	
Piston Annular Width	Top Ring		1.03-1.05	———	
	2nd Ring		1.22-1.24	———	
	Oil Ring		2.51-2.53	———	
Internal dia. of Piston Pin Bore	23.002-23.008			23.030	
Exterior dia. Piston Pin	22.995-23.000			22.980	
Rod Small End Inner dia.	23.015-23.020			23.040	
Rod Big End Gap	0.10-0.55			1.0	
Rod Big End Thickness	24.95-25.00				
Crankshaft Run-out	0.03			0.08	

Clutch + Transmission

(mm)

Item	Standard	Limit	Remark
Clutch Friction plate inner dia.	140.00-140.15	140.50	
Clutch Joint Rotation	1800-2400RPM	———	
Clutch engagement	3300-3900RPM	———	
Drive Belt Width	35.2	33.5	
Driven Disc Spring Free Length	168	160	
Shifter and fit flute gap	0.10-0.40	0.50	
Left Shifter Sliding Thickness	5.8-5.9	———	
Right Shifter Sliding Thickness	5.8-5.9	———	
Plunging Flute Width	6.0-6.2	———	
Driven Output Gear Sliding Width	6.0-6.2	———	

Tightening Torque

Item	Torque N·m(kgf·m)	Item	Torque N·m(kgf·m)
5mm Bolt, nut	5(0.5)	5mm Screw	4(0.4)
6mm Bolt, nut	10(1.0)	6mm Screw	9(0.9)
8mm Bolt, nut	22(2.2)	6mmSH Bolt with flange,	10(1.0)
10mm Bolt, nut	34(3.5)	6mm Bolt with flange, nut	12(1.2)
12mm Bolt, nut	54(5.5)	8mm Bolt with flange, nut	26(2.7)
		10mm Bolt with flange, nut	39(4.0)

For others not listed in the chart, refer to the standard tightening torque.
Notes: Apply some engine oil on the part of screw thread and adjoining surface

Item	Thread Dia. (mm)	Quantity	Torque N·m(kgf·m)	Remark
Upper Front Mounting Bolt, Engine	M8×60	1	16～20	
Upper Rear Mounting Bolt, Engine	M10×1.25×110	1	40～50	
Upper Rear Mounting Bracket Bolt, Engine	M8×14	1	16～20	
Upper Front Mounting Bracket Bolt, Engine	M8×14	1	16～20	
Low Mounting Bolt, Engine	M12×1.25×140	2	50～60	
Bolt, Swing Arm	M10×1.25×70	16	40～50	
Bolt, Rear Absorber	M10×1.25×50	4	40～50	
Bolt, Front Absorber	M10×1.25×50	4	40～50	
Bolt, Rear Wheel Shaft Holder	M10×1.25×100	4	40～50	
Mounting Nut, Rim	901-07.00.02 M20	16	50～60	
Nut, Rim Shaft	901-07.00.03 M10	4	110～130	
Mounting Screw, Rear Brake Caliper	M6×25	2	18～22	
Bolt, Rear Brake Caliper	M10×1.25×20	2	40～50	
Bolt, Front Brake Disc	901-08.00.03 M8×	8	25～30	
Bolt, Front Brake Caliper	M8×14	4	16～20	
Locknut, Steering Stem	M8×55	4	16～20	
Nut, Steering Stem	M10×1.25	4	40～50	
Locknut, Steering Shaft	M14×1.5	1	100～120	
Rear Mounting Bolt, Muffler	M8×30	1	16～20	
Bolt, Exhaust Pipe	M8×14	1	16～20	
Mounting Bolt, Exhaust Pipe	M8×40	1	16～20	
Mounting Bolt, Rear Axle	M10×1.25×110	2	40～50	
Mounting Bolt, Front Axle	M10×1.25×90	1	40～50	
Mounting Bolt, Front Axle	M10×1.25×25	2	40～50	
Back End Bolt, Rear Trans Shaft	901-30.00.01	6	40～50	
Front End Bolt, Rear Trans Shaft	901-29.00.01	4	35～45	
Bolt, Front Trans Shaft	901-29.00.01	8	35～45	
Thermo Switch	CF250T-420500	1	9～12	
Mounting Bolt 1, Front Rack	M8×14	2	35～45	
Mounting Bolt 2, Front Rack	M6×12	2	25～30	
Mounting Bolt , Rear Rack	M8×14	4	16～20	

Engine Tightening Torque Table

Item	Q'ty	Screw dia.（mm）	Torque （N.m）	Remark
Sensor, Reverse Gear	1	M10×1.25	20	
Spark Plug	1	M12×1.25	18	
Water Temperature Sensor	1	Rc1/8	8	Apply screw thread sealant
Valve Clearance Adjusting Nut	4	M5	10	
Drive Disc Nut	1	M20×1.5	115	
Driven Disc Nut	1	M20×1.5	115	
Circle Nut, Driving Disc	1	M30×1	100	
Nut, Front Output Shaft	1	M14×1.5	97	
Nut, Drive Bevel Gear	1	M22×1	145	
Nut, Driven Bevel Gear	1	M16×1.5	150	
Fixing Nut, Clutch	1	M18×1.5	70	Left handed
Limiting Nut, Driven Bevel Gear Shaft	1	M60	110	Apply screw thread sealant
Limiting Nut, Front Output Shaft	1	M55	80	Apply screw thread sealant, left handed
Bolt, Swing Arm Shaft	2	M14×1.25	28	
Drain Bolt	1	M12×1.5	30	
Mounting Bolt, Overriding Clutch	6	M8	26	Apply screw thread sealant
Mounting Bolt, Magneto Stator	3	M6	10	Apply screw thread sealant
Bolt, CVT Windshield	3	M6	10	Apply screw thread sealant
Link Bolt, Oil Pipe	2	M14×1.5	18	
Mounting, Oil Pump	3	M6	10	
Mounting Bolt, Pressure Limiting Valve	2	M6	10	
Bolt, Drive Bevel Gear Cover	4	M8	32	
Bolt, Driven Bevel Gear Cover	4	M8	25	
Locating Bolt, Shift	1	M14×1.5	18	
Flange Bolt, Fan	1	M10×1.25	55	

To be continued

Item	Quantity	Diameter（mm）	Torque （N.m）	Remark
Bolt, Crankcase	14	M6	10	
	3	M8	25	
Bolt, Driven Sector Gear	1	M6	12	
Mounting Bolt, Oil Filter	1	M20×1.5	63	
Oil Filter	1	3/4?（16 /in	18～20	
Bolt, Starting Motor	2	M6	10	
Bolt, Cylinder Head	4	M10	46	
Bolt, Cylinder Head(2 sides)	2	M6	10	
	1	M8	25	
Upper and Lower Bolt, Cylinder	4	M6	10	
Bolt, Cylinder Head Cover	12	M6	10	
Bolt, Chain Tensioner	2	M6	10	
Nut, Chain Tensioner	1	M8	8	
Bolt, Radiator Fan	3	M6	10	
Thermostat Bolt	2	M6	10	
Bolt, Water Pump Cover	3	M6	6	
Mounting Bolt, Water Pump	2	M6	10	
Fixed Bolt, Timing Sprocket	2	M6	15	Apply screw thread sealant
Bolt without remarks		M5	4.5-6	
		M6	8-12	
		M8	18-25	

Engine Tools

Measuring Tools				
No	Name	Type	Function	Remark
1	Vernier Calipers	0-150mm	Measure length and thickness	
2	Micrometers	0-25mm	Measure the outer diameters of swing arm, valve rod and camshaft	
3	Dial gauge	25-50mm	Measure max. lift range of camshaft	
4	Dial gauge	75-100mm	Measure piston skirt	
5	Inner dia. Gauge, Cylinder		Measure inner dia. of cylinder head	
6	Inner dia. Gauge,	10-34mm	Inner dia. of swing arm, piston pin hole, and rod head hole	
7	Dial Test Indicator	1/100	Run-out	
8	Knife Straight Edge		plainness	
9	Feeler Gauge		Plainness, adjusting valve clearance	
10	Fuel Level Gauge		Fuel level length of carburetor	
11	Plastic gauge		Fit clearance	
12	pull tension gauge		Spring bounce	
13	Tachometer		Engine rotation rate	
14	Cylinder Pressure Meter		pressure in cyclinder	
15	Oil Pressure Gage		Oil pressure	
16	Barometer		Opening pressure of radiator cover	
17	Ohmmeter		Resistance and voltage	
18	Amperemeter		Opening of currency / switch	
19	Thermometer		Liquid temperature	
20	Timing Lights		Test spark timing	
21	Torque Tester	One Set	Tightening torque	
Auxiliary Measuring Instrument				
22	Alcohol Burner		Warming up	
23	Magnet Stand		Install dialgauge	
24	Slab		Auxiliary measure supplementary	
25	V-Block		Run-out supplementary	
26	Forcep		Install valve clip	
27	Plier		Disassemble and install circlip	
28	Joint Plier		Disassemble and install flange	
29	Impact Driver		Disassemble cross recessed bolt	
30	Slot Type Driver			
31	Cross Type Driver			

Special Purpose Tools

No	Name	Type	Function	Remark
1	Spark Plug Wrench	172MM-022400-922-004	Disassemble/ install spark plug	
2	CVT Wrench	CF188-051000-922-001 CF188-052000-922-001	Disassemble/install CVT drive/driven disc nut	
3	Oil Filter Wrench	CF188-011300-922-001	Disassemble/ install oil filter	
4	Piston Pin Remover	CF188-040004-922-002	Disassemble piston pin	
5	Magneto stator Remover	CF188-031000-922-001	Disassemble magneto stator	
6	Crankcase Dissociator		Divide L/R crank case	
7	Crank Remover		Disassemble crank shaft from left crankcase	
8	Crank Tool		Install crank shaft on left crankcase	
9	Valve Spring Compressor	CF188-022006-922-001	Disassemble/ install valve spring	
10	Valve Former	CF188-022004-922-001	Grind valve	
11	Circle Nut Wrench	CF188-052000-922-003	Disassemble CVT driven disc	
12	Driven Disc Clamp	CF188-052000-922-004	Disassemble CVT driven disc	
13	Driven Disc Former	CF188-052000-922-002	Disassemble CVT driven disc	
14	Limiting nut Wrench	CF188-062204-922-001	Disassemble driven bevel gear bearing limiting nut	
15	Bearing Tool	One full set	Install bearing and oil ring	
16	Bearing Remover	One full set	Disassemble bearing	
17	Oil Ring Remover		Disassemble bearing	
18	Limiting Nut Wrench	CF188-060008-922-001	Disassemble front output shaft bearing limiting nut	
19	PDA		Diagnose failures of EFI system	
20	Oetiker Clamp Catcher		Disassemble/ install fuel Pipe	
21				
22				
23				
24				
25				

Lubricant Grease, Sealant

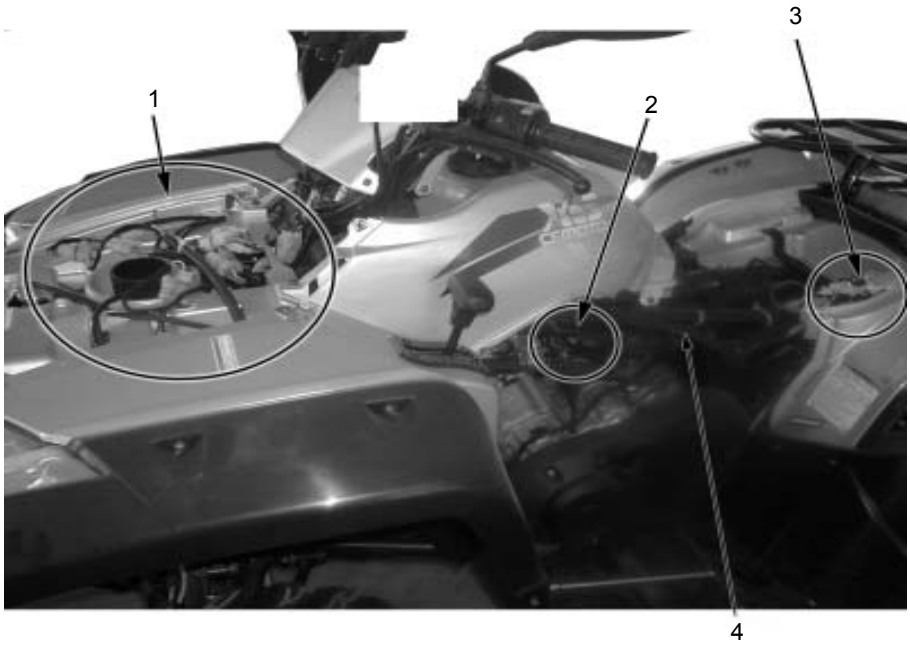
Coated Section	Attention	Grease
Turning Bearings Throttle Cable Connecting Portion Throttle Pedal Movable Parts Brake Pedal Movable Parts Swing Arm Movable Parts Steering Inner Circle Surface Seat Lock Movable Parts Transmission Movable Parts		Multi-purpose grease

Operation Material and Installment Supplementary of Engine

Engine operation materials include lubricant (oil), grease (lubricant grease) and coolant, installment supplementary includes plane sealant and screw thread sealant.

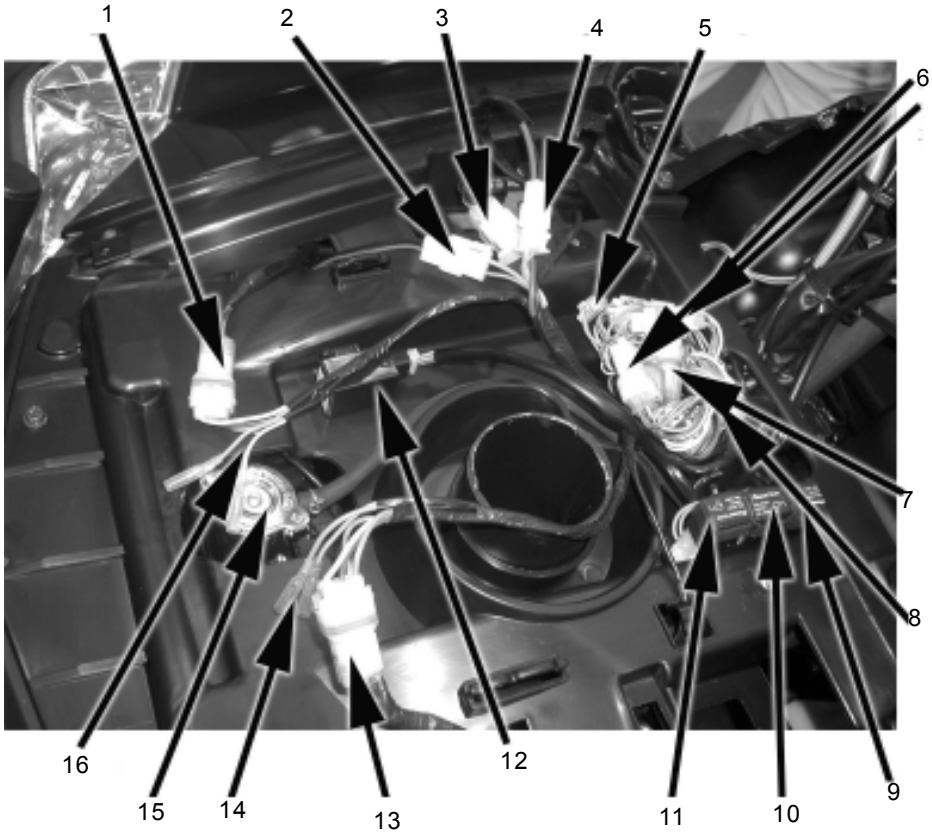
Name	Type	Parts	Remark
lubricant /oil	Specially for 4-stroke motorcycle SAE-10W-40、20W-50 Substitutes must be used in the following range. API type: SE or SG grade （Replacement see 1-3）	Rotating section and carriage in cylinder, Rotating section and carriage in crankcase Rotating section and carriage in cylinder head See Lubrication Systems Diagram（5-14）	capacity 2200m L(2.32Qts)(replace oil) 2300 m L(2.43 Qts)（replace oil filter） 2600 m L(2.75Qts)（engine overhaul）
Lubricant with molybdenum		Piston pin, valve rod part, valve ring, cam shaft	
Grease/lubricant grease	# 3 MoS_2 lithium based grease	Oil seal lip, O ring and other latex sealing, bearing with seals, and CVT bearing/housing	
Coolant	-35℃ anti-freeze, anti-rust, high –boiled coolant	Cooling system, water seals	Capacity based on radiator pipe system
Plane sealant		Coupling surfaces of cases, cases and cylinder, cylinder head and cylinder head cover	
Screw thread sealant		Some screw thread	

Wiring, Pipes, Cable Layout



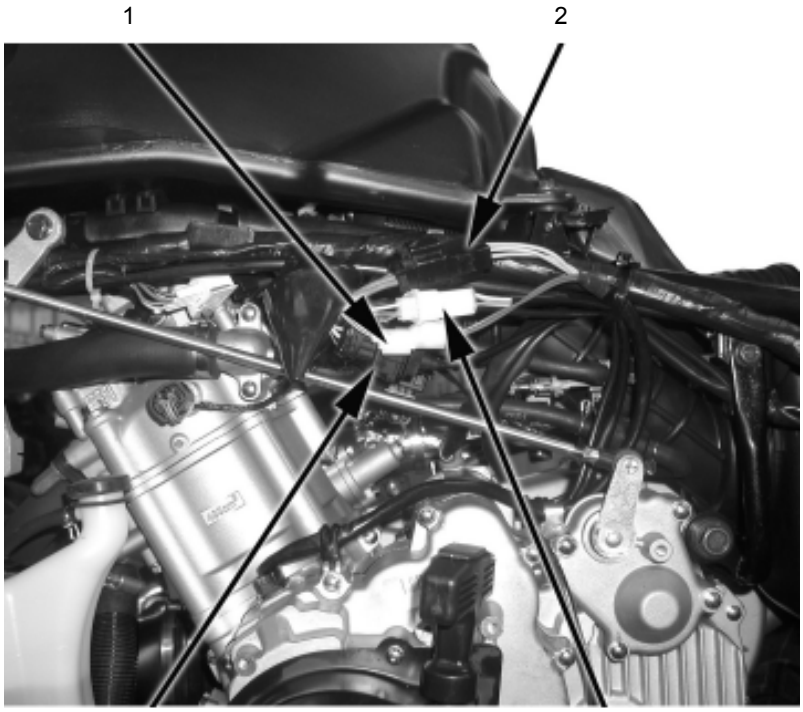
1.Plug-in on Front Fender (See Pic 1) 2.Wirings in Middle Section (See Pic 2) 3.Plug-in on Rear Fender (See Pic 3) 4.Main Cable

Picture 1



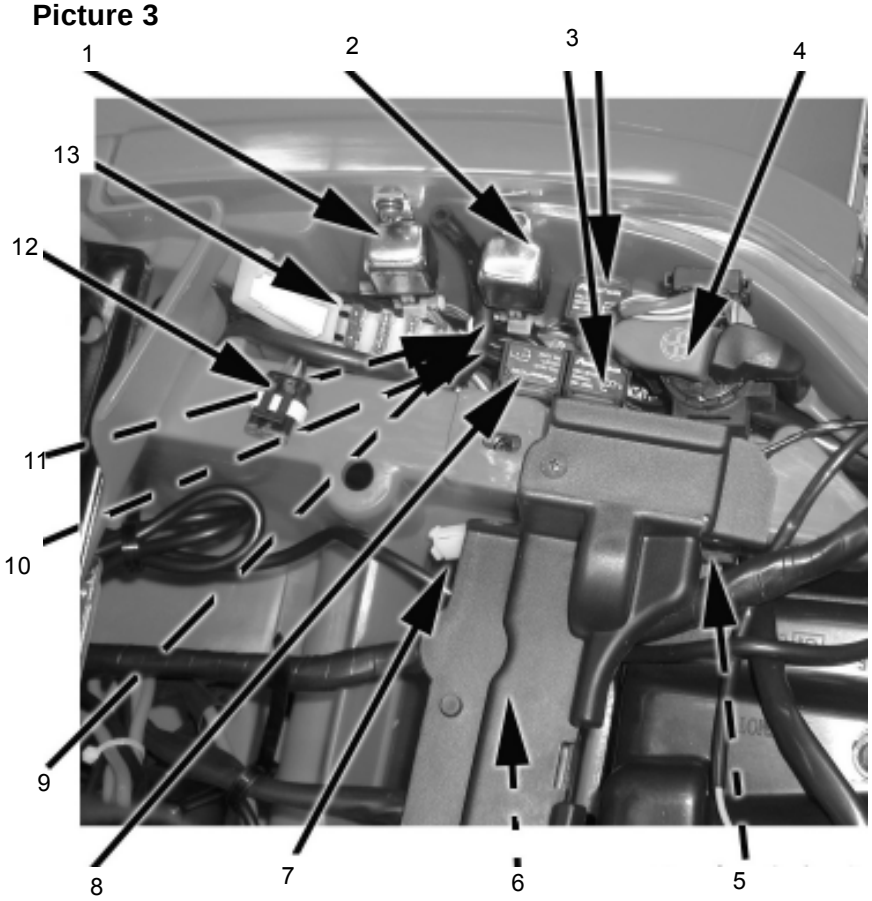
1.Front RH Headlight Plug-in 2.Fan Plug-in 3.Ignition Switch Plug-in 4.Backup Power Plug-in 5.Fuel Sensor Plug-in 6.LH&RH Handlebar Switch Plug-in 7.2WD/4WD Switch Plug-in 8.Dashboard Plug-in 9.2WD/4WD Switch Realy 10.4WD Locker Relay 11.Brake Light Relay 12.Flasher 13.LH Headlight Plug-in 14.Front LH Turn Signal Plug-in 5.Radiator Cap 16.Front RH Turn Signal Plug-in

Picture 2

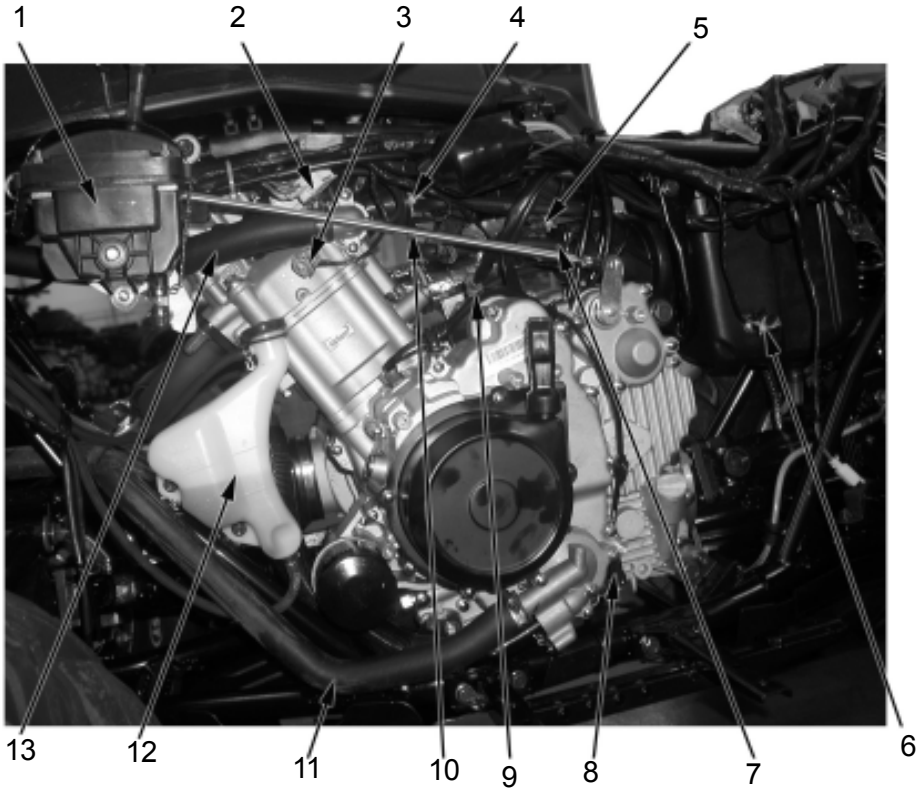


1.Trigger Coil Plug-in 2.Magneto Plug-in 3.Speedometer Sensor Plug-in 4.Shift Switch Sensor Plug-in

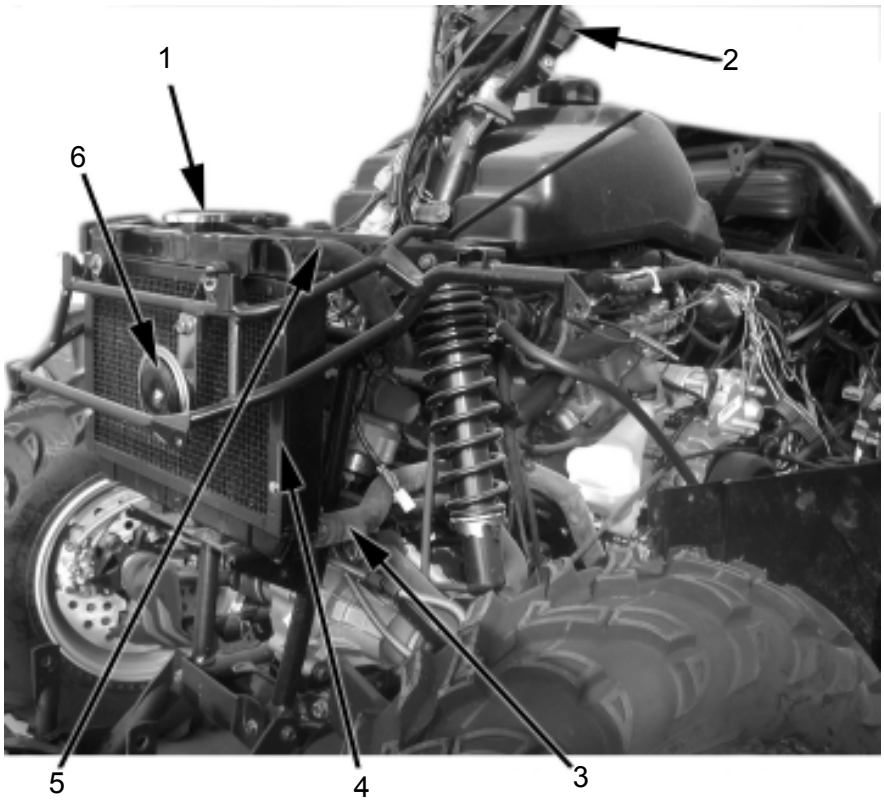
Picture 3



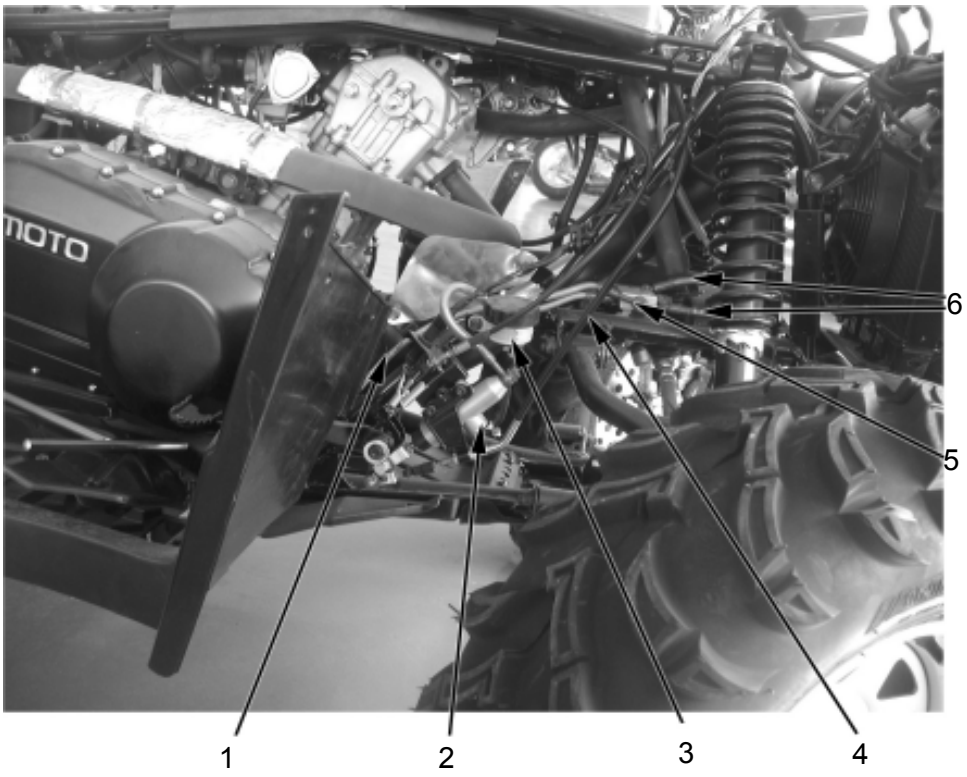
1.Fan Plug-in 2.Headlight Plug-in 3.Start Servo- Relay 4.Start Relay 5.Parking Brake Plug-in 6.Battery
7.Clock Setting Plug-in 8.Fuel Pump Relay 9.Oxygen Sensor Heat Fuse 10.Parking Position Diode
11.Neutral Position Diode 12.Troubleshooting Plug-in 13.Fusebox Plug-in



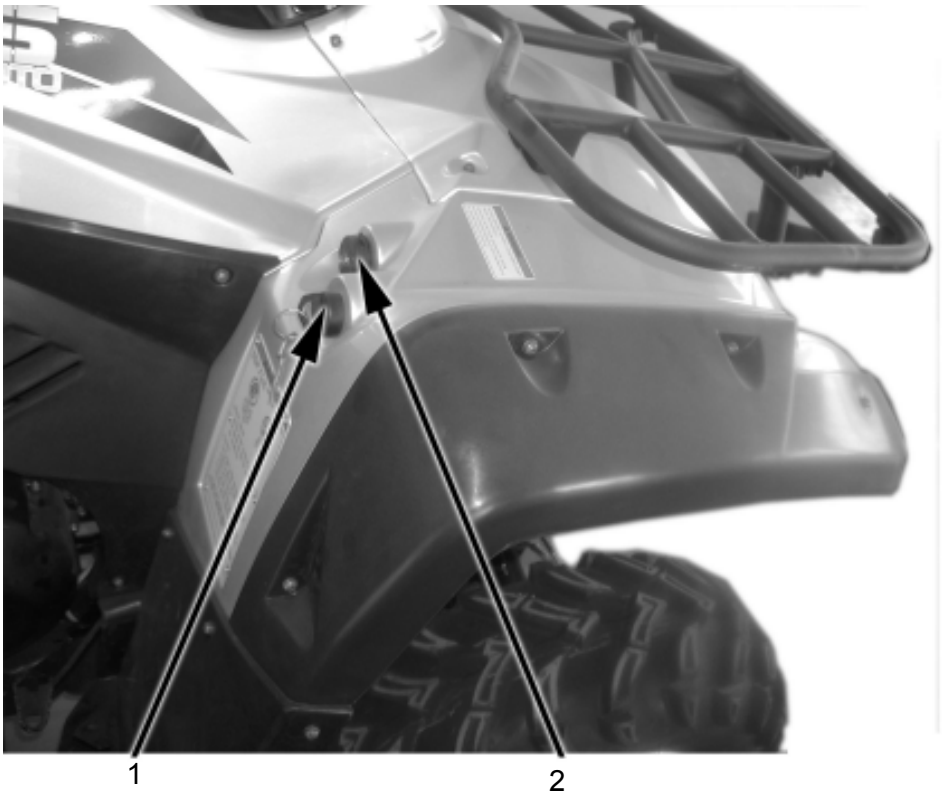
1.Gear Shift Mechanism 2.Oxygen Sensor Plug-in 3.Water Temp Sensor 4.Throttle Body
5.MAP Sensor 6.IAT sensor 7.Idle Air Control Valve 8.Speedometer Sensor 9.Starting Motor
10.Shift Rod 11.Radiator Water Outlet Hose 12.Reservoir Tank 13.Radiator Water Inlet Hose



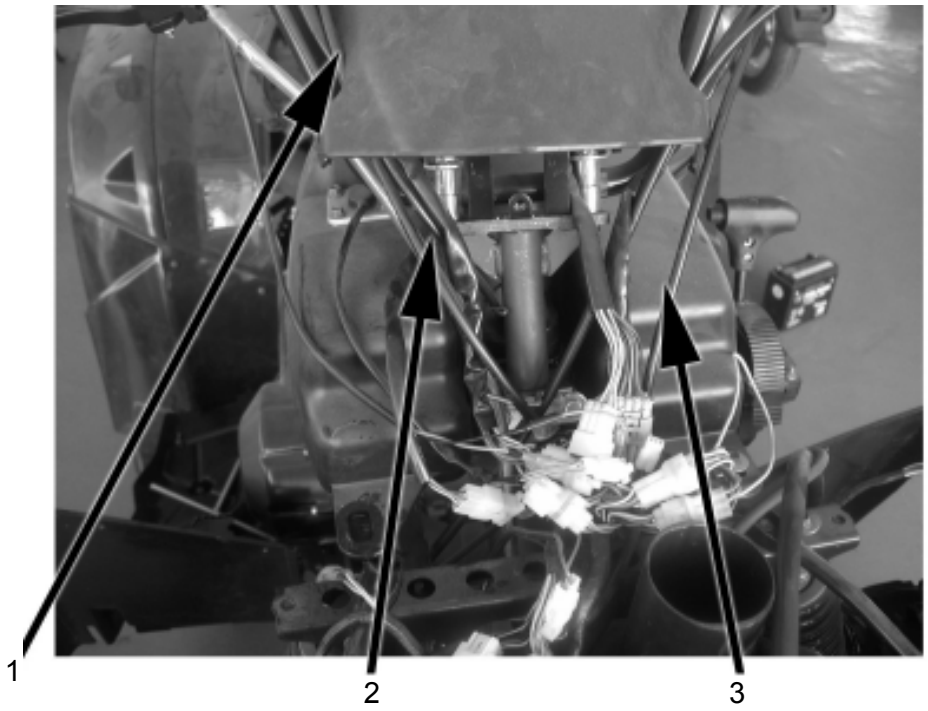
1.Radiator Cap 2.Dashboard 3.Radiator Water Outlet Hose 4.Radiator
5.Radiator Water Outlet Hose 6.Horn



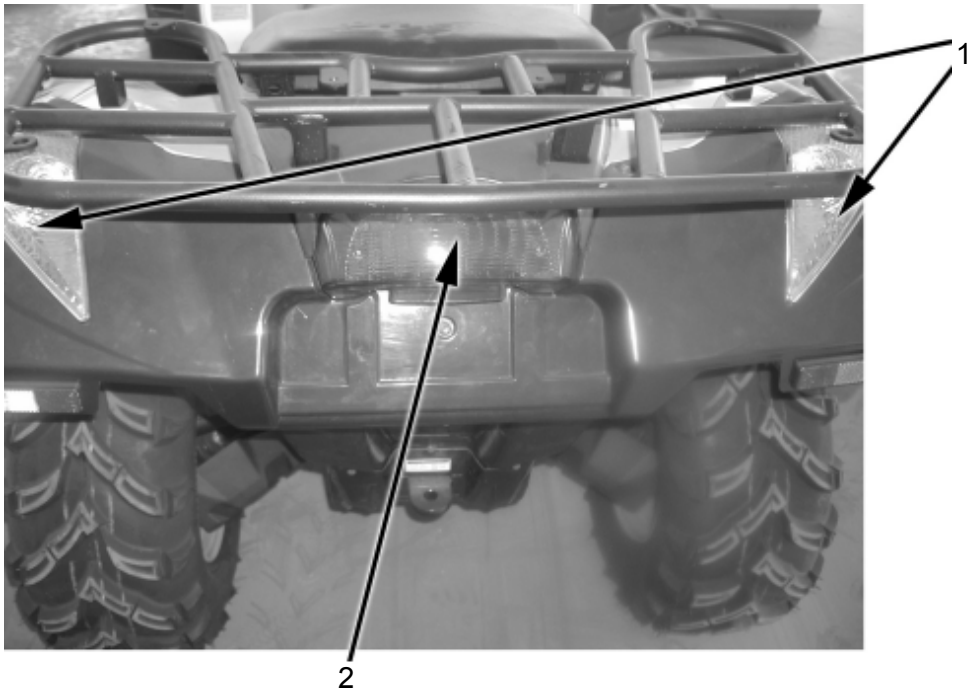
1.Rear Brake Hose 2.Master Cylinder 3.Brake Fluid Reservoir 4.Brake Cable
5.Four-way Connector 6.Front Brake Hose



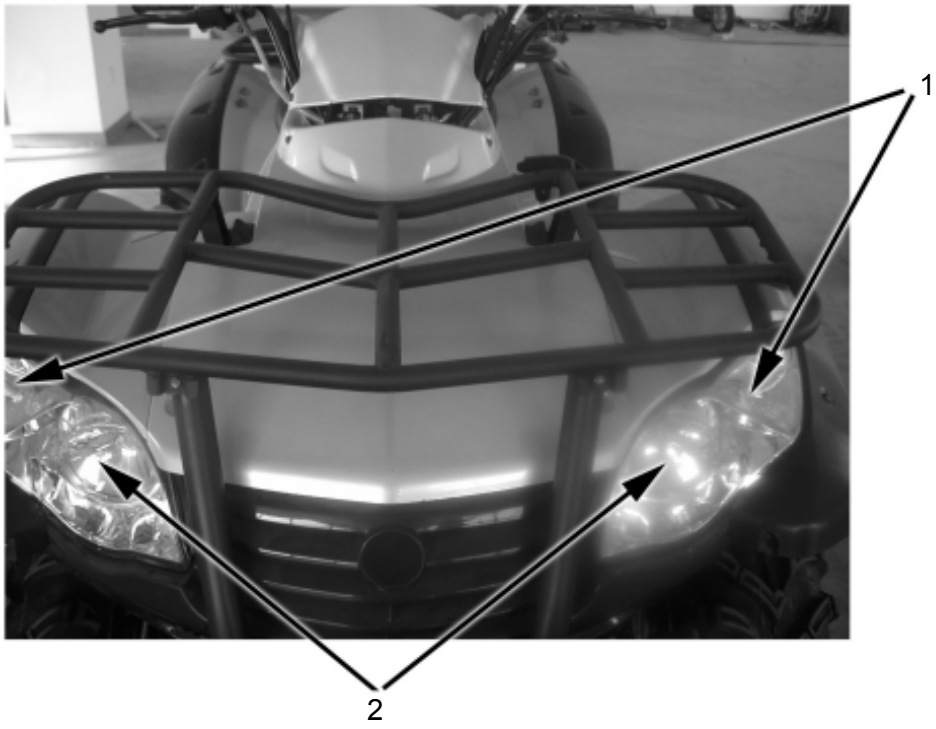
1.Ignition Switch 2.Back-up Power Plug-in



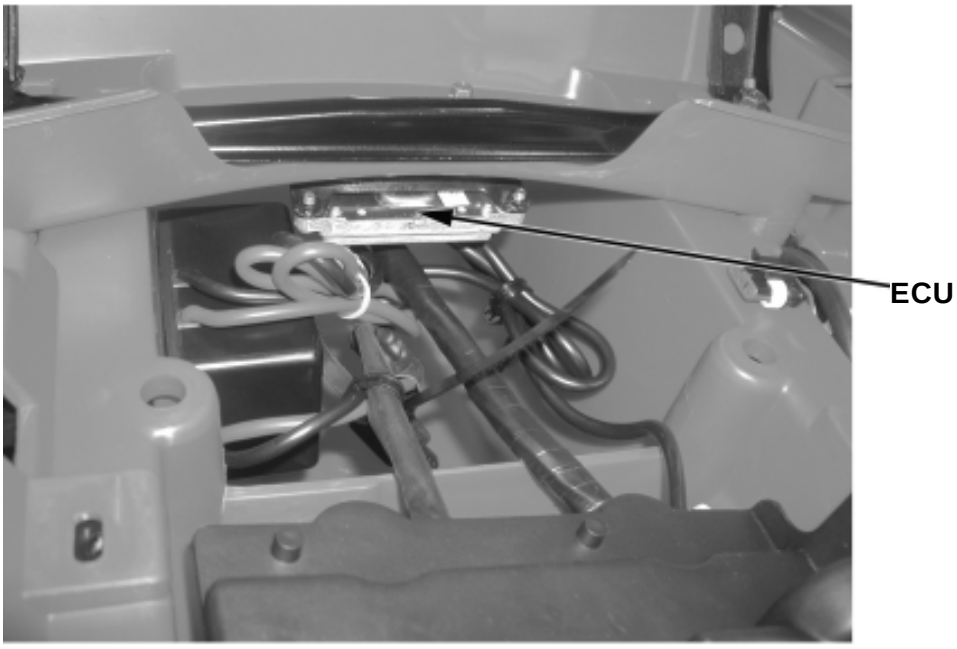
1.Parking Cable 2.Throttle Cable 3.Choke Cable



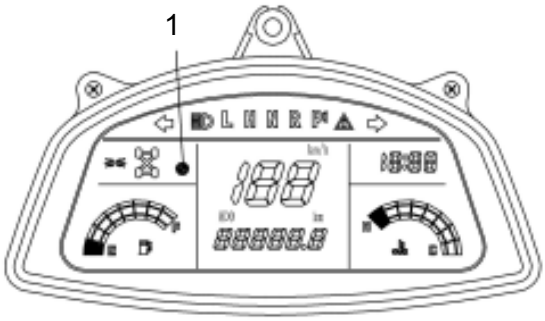
1.Rear Turn Lights 2.Taillight



1.Front Turn Lights 2.Headlights



Failure Indicator

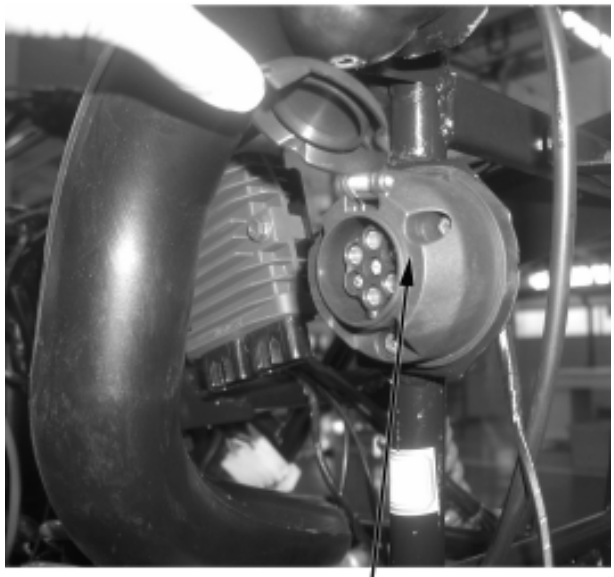


Failure Indiactor is located on the left top"1"of instrument.

While the indicator flashing is faulty, failure uses 4-digit flashing.
For example:0650,
"0" flashes 10 times,
"6" flashes 6 times,
"5" flashes 5 times,
"0" flashes 10 times,
See (Page 11-27) for the meaning of Diagnostic Trouble Code.
While failure appears, use PDA to diagnose it.
Connect PDA with PDA connector, the location of PDA connector (see Page 1-19) Picture 3. the use of PDA (see Page 11-26).

Power Output Socket

Output Voltage:DC12V
The power only supply for the rear turning light, taillight and rear registration plate lamp of the trailer.



Overhaul Information

Operation Cautions

WARNING:

Gasoline is highly flammable, therefore smoke and fire are strictly forbidden in the work place. Special attention should also be paid to sparks. Gasoline may also be explosive when it is vaporized, so operation should be done in a well-ventilated place.
Remove and Install muffler after it is fully cold.

- This chapter is on the disassembly and installation of rack, visible parts, exhaust pipe, muffler and fuel tank.
- Hoses, cables and wiring should be routed properly.
- Replace the gasket with a new one after muffler is removed.
- After muffler is installed, check if there is any exhaust leakage.

Tightening Torque

Muffler Rear Fixing Bolt: 35-45**N.m**
Muffler Exhaust Pipe Bolt: 35-45**N.m**
Muffler Body Fixing Bolt: 35-45**N.m**

Troubleshooting

Loud exhaust noise
- Broken muffler
- Exhaust leakage

Insufficient power

- Distorted muffler
- Exhaust leakage
- Muffler clogged